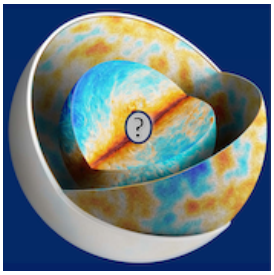

ID de Contribution: **8** Type: **Non spécifié**

Polarized emissions from the local bubble

mercredi 15 octobre 2025 09:40 (20 minutes)

We present the development of a local bubble model designed to characterize polarized Galactic foregrounds emission at high Galactic latitudes. The framework focuses on modeling the polarized dust emission (Stokes Q and U) as well as the synchrotron contribution, under the hypothesis of a magnetized local cavity surrounding the Solar neighborhood. By combining observational constraints with simplified physical hypothesis for the local magnetic field geometry and matter distribution, the model provides a physically motivated description of the polarization patterns observed in the microwave sky. This approach offers an alternative to purely empirical templates, enabling a more robust interpretation of high-latitude foregrounds and their spatial correlations. Applications to Cosmic Microwave Background (CMB) polarization studies are possible and under development, with an emphasis on reducing systematic uncertainties in the search for primordial B-modes.

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Classification de Session: CMB results and analysis